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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,027	09/12/2000	William J. Rowe	CASE 1	6144

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EXAMINER

KADING, JOSHUA A

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/660,027

Applicant(s)

ROWE, WILLIAM J.

Examiner

Joshua Kading

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-22 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 10/15/2001 fails to comply with 37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office. It has been placed in the application file, but the information referred to therein has not been considered.

European Patent Applications EP 1 014 722 A2 and EP 1 014 722 A3 are not listed on applicant's IDS.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the limitation "said setting step" in line 16. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

- 5 Claims 1-7, 9-14, 21, and 22 are rejected under 35 U.S.C. 102(a) as being anticipated by Chen et al. (WO 00/28712 A).

In regard to claim 1, Chen discloses “an apparatus, comprising:

10 a cable modem terminating system having a plurality of cable modem terminating system modules, said cable modem terminating system including a communication port (pg. 62, lines 24-26);

 a spectrum analyzer having a communication port (pg. 62, lines 33-36 where monitoring the upstream channels identifies the function of the spectrum analyzer);

15 wherein said spectrum analyzer and said cable modem terminating system modules are coupled together at least via their respective communication ports, said cable modem terminating system modules employing respective upstream channels that are selected as a function of information supplied by said spectrum analyzer (pg. 62, lines 24-37).”

20 In regard to claim 2, Chen discloses “the invention as defined in claim 1 wherein said spectrum analyzer and said cable modem terminating system modules are further coupled via a spectrum controller that is coupled to said respective communication ports of said spectrum analyzer and said cable modem terminating system modules, said spectrum controller selecting, as a function of at least information received from said

spectrum analyzer, said respective upstream channels employed by said cable modem terminating system modules (pg. 62, lines 24-37 and pg. 63, lines 18-33 where the spectrum management/allocation circuit is the spectrum controller)."

5 In regard to claim 3, Chen discloses "the invention as defined in claim 1 wherein spectrum analyzer determines a power level for each upstream channel coupled to it (pg. 62, lines 33-37 where the signal to noise ratio measures the signal power level)."

10 In regard to claim 4, Chen discloses "the invention as defined in claim 1 wherein said spectrum analyzer supplies, via at least their respective communication ports, statistics regarding interference on at least one upstream channel to said cable modem terminating system modules (pg. 62, lines 38-39; it should also be noted that the signal to noise ratio is a statistic regarding interference on at least one upstream channel)."

15 In regard to claim 5, Chen discloses "the invention as defined in claim 1 wherein said spectrum analyzer and said cable modem terminating system modules are further coupled via a spectrum controller that is coupled to said respective communication ports of said spectrum analyzer and said cable modem terminating system modules, and wherein said spectrum analyzer supplies to said spectrum controller via at least their
20 respective communication ports statistics regarding interference on a least one upstream channel (pg. 62, lines 24-39 where the spectrum manager/allocation circuit is

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the spectrum controller; the signal to noise ratio is a statistic relating to interference on at least one upstream channel)."

In regard to claim 6, Chen discloses "a method for use in connection with a cable
5 modem system having a cable modem terminating system module and a spectrum
analyzer each having a communication port, the method comprising the step of
searching for a candidate channel having a specified bandwidth within the spectrum
allocated for use as upstream channels that are indicated by said spectrum analyzer to
have an acceptable noise level over a prescribed period of time (pg. 63, lines 18-33
10 searching for a candidate channel is the same as monitoring the upstream channels)."

In regard to claim 7, Chen discloses "the invention as defined in claim 6 wherein
said searching step failed to find a channel with an acceptable noise level over said
prescribed period, the method further comprising the steps of:
15 reducing said specified bandwidth (pg. 65, lines 13-30); and
repeating said searching step (pg. 66, lines 1-7 where this is saying that the
searching step is performed if needed, such as in the event of a previous searching
failure)."

20 In regard to claim 9, Chen discloses "the invention as defined in claim 6 wherein
said cable modem system further comprises a plurality of cable modems, said method
further comprising the step of:

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when said searching step finds a channel with an acceptable noise level over said prescribed period, instructing said plurality of cable modems to employ said found channel for upstream communications (pg. 63, lines 18-33)."

5 In regard to claim 10, Chen discloses "the invention as defined in claim 6 wherein said cable modem system further comprises a plurality of cable modems, said method further comprising the step of:

when said searching step finds a plurality of channels that each have an acceptable noise level over said prescribed period, instructing said plurality of cable
10 modems to employ for upstream communications said found channel that has the minimum noise power (pg. 63, liens 18-33)."

In regard to claim 11, Chen discloses "a method for use in a spectrum controller of a cable modem system having a cable modem terminating system and a spectrum
15 analyzer, said spectrum controller, said cable modem terminating system, and said spectrum analyzer each having a communication port and each being coupled to the other, at least indirectly, via their respective communication ports, the method comprising the step of:

setting a searched-for bandwidth to a maximum upstream channel bandwidth
20 (pg. 63, lines 29-33 where the threshold is the same as the maximum upstream channel bandwidth);

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developing a set of candidate channels that have said searched-for bandwidth within the spectrum allocated for use as upstream channels (pg. 62, lines 33-36 where monitoring the upstream channels is the same as developing a set of candidate channels);

5 obtaining from said spectrum analyzer a noise power level for each candidate upstream channel having a bandwidth equal to said searched-for bandwidth (pg. 62, lines 36-37);

eliminating any candidate upstream channel that has a bandwidth equal to said searched-for bandwidth and an unacceptable noise level over a prescribed period of
10 time (pg. 63, lines 18-20);

transmitting to said cable modem terminating system a lowest-noise-power one of said candidate channels that remains when there is at least one candidate channel that is not eliminated from said set in said eliminating step, whereby said cable modem terminating system can instruct cable modems to use said lowest noise power
15 candidate channel as an upstream channel (pg. 63, lines 18-22)."

In regard to claim 12, Chen discloses "the invention as defined in claim 11 wherein, when said eliminating step eliminates all of said candidate upstream channels, said method further comprises the steps of:

20 setting said searched-for bandwidth to a bandwidth for an upstream channel that is the next narrowest bandwidth size than the searched-for bandwidth size employed in the immediately preceding eliminating step (pg. 65, lines 13-30; pg. 66, lines 1-7

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whereby incrementing the bandwidth by 1 Hz increments the bandwidth is narrowed to the next bandwidth size); and

repeating said developing, eliminating, and transmitting steps (pg. 66, lines 1-7 where this is saying that the searching step is performed if needed then the remaining
5 steps must be executed according to the steps of the method)."

In regard to claim 13, Chen discloses "a method for use in a cable modem terminating system of a cable modem system having a spectrum analyzer, said cable modem terminating system and said spectrum analyzer each having a communication
10 port and each being coupled to the other, at least indirectly, via their respective communication ports, the method comprising the step of:

setting a searched-for bandwidth to a maximum upstream channel bandwidth (pg. 63, lines 29-33 where the threshold is the same as the maximum upstream channel bandwidth);

15 developing a set of candidate channels that have said searched-for bandwidth within the spectrum allocated for use as upstream channels (pg. 62, lines 33-36 where monitoring the upstream channels is the same as developing a set of candidate channels);

obtaining from said spectrum analyzer a noise power level for each candidate
20 upstream channel having a bandwidth equal to said searched-for bandwidth (pg. 62, lines 36-37);

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eliminating any candidate upstream channel that has a bandwidth equal to said searched-for bandwidth and an unacceptable noise level over a prescribed period of time (pg. 63, lines 18-20);

5 instructing cable modems served by said cable modem terminating system to employ as an upstream channel a lowest-noise-power one of said candidate channels that remains when there is at least one candidate channel that is not eliminated from said set in said eliminating step (pg. 63, lines 18-22).”

10 In regard to claim 14, Chen discloses “the invention as defined in claim 13 wherein, when said eliminating step eliminates all of said candidate upstream channels, said method further comprises the steps of:

15 setting said searched-for bandwidth to a bandwidth for an upstream channel that is the next narrowest bandwidth size than the searched-for bandwidth size employed in the immediately preceding eliminating step (pg. 65, lines 13-30; pg. 66, lines 1-7 whereby incrementing the bandwidth by 1 Hz increments the bandwidth is narrowed to the next bandwidth size); and

20 repeating said developing, eliminating, and transmitting steps (pg. 66, lines 1-7 where this is saying that the searching step is performed if needed then the remaining steps must be executed according to the steps of the method).”

In regard to claim 21, Chen discloses “an apparatus, comprising:

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a plurality of cable modem terminating system modules each having a communication port (pg. 62, lines 24-26);

a spectrum analyzer having a communication port (pg. 62, lines 33-36 where monitoring the upstream channels identifies the function of the spectrum analyzer);

5 wherein said spectrum analyzer and said cable modem terminating system modules are coupled together at least via their respective communication ports, said cable modem terminating system modules employing respective upstream channels that are selected as a function of information supplied by said spectrum analyzer (pg. 62, lines 24-37)."

10

In regard to claim 22, Chen discloses "a method for use in connection with a cable modem system having a cable modem terminating system module and a spectrum analyzer each having a communication port, the method comprising the step of searching for a best throughput channel over a prescribed period of time as a
15 function of noise information developed by said spectrum analyzer (pg. 63, lines 18-33 searching for a best throughput channel is the same as monitoring the upstream channels)."

Allowable Subject Matter

20 Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims/.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Kading whose telephone number is (703) 305-0342. The examiner can normally be reached on M-F: 8:30AM-5PM.

5 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Olms can be reached on (703) 305-4703. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-10 3900.



JK
December 10, 2003

15

Joshua Kading
Examiner
Art Unit 2661


KENNETH VANDERPUYE
PRIMARY EXAMINER